

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/003353

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F01N3/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 F01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 6 216 448 B1 (SCHNAIBEL EBERHARD ET AL) 17 April 2001 (2001-04-17) column 3, line 21 - line 30; figure 1 | 1,5,6 |
| P,A | EP 1 378 645 A2 (FORD GLOBAL TECHNOLOGIES, LLC) 7 January 2004 (2004-01-07) abstract; figures | 1 |
| A | US 6 499 294 B1 (KATOH KENJI ET AL) 31 December 2002 (2002-12-31) cited in the application column 9, line 26 - column 13, line 39; figures 1,2 | 1-6 |
| P,A | US 2004/001781 A1 (KUMAR SANATH V ET AL) 1 January 2004 (2004-01-01) claim 1; figures | 1-6 |
| | ----- -/-- ----- | |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

G document member of the same patent family

Date of the actual completion of the international search

1 February 2005

Date of mailing of the international search report

07/02/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Sideris, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/003353

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | GB 2 355 944 A (* TOYOTA JIDOSHA KABUSHIKI KAISHA) 9 May 2001 (2001-05-09) page 22, line 1 - line 19; figure 3 ----- | 1 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/003353

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|--|--|
| US 6216448 | B1 | 17-04-2001 | DE 19801626 A1 FR 2773844 A1 JP 11280455 A | 22-07-1999 23-07-1999 12-10-1999 |
| EP 1378645 | A2 | 07-01-2004 | US 5974788 A EP 1380732 A2 DE 69821171 D1 DE 69821171 T2 EP 0899430 A2 JP 11148399 A US 6199373 B1 | 02-11-1999 14-01-2004 26-02-2004 18-11-2004 03-03-1999 02-06-1999 13-03-2001 |
| US 6499294 | B1 | 31-12-2002 | JP 3370957 B2 JP 2000154713 A DE 19944694 A1 GB 2355944 A ,B GB 2342056 A ,B | 27-01-2003 06-06-2000 17-08-2000 09-05-2001 05-04-2000 |
| US 2004001781 | A1 | 01-01-2004 | WO 2004002621 A2 US 2004001782 A1 | 08-01-2004 01-01-2004 |
| GB 2355944 | A | 09-05-2001 | JP 3370957 B2 JP 2000154713 A DE 19944694 A1 GB 2342056 A ,B US 6499294 B1 | 27-01-2003 06-06-2000 17-08-2000 05-04-2000 31-12-2002 |